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REMARKS

The Office action dated August 12, 2005 and the cited references have been carefully considered.

Status of the Claims

Claims 4-9 are pending.

Claims 7 and 8 are objected to as being dependent on canceled claim 1. Claims 7 and 8 are now rewritten as independent claims and incorporate all of the limitations of original claim 1. Therefore, this objection is now overcome.

Claims 4 and 5 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite.

Claims 4-6 are rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent 5,470,932 (hereinafter "Jinkerson '932") and U.S. Patent 5,662,707 (hereinafter "Jinkerson '707"). Claims 4 and 5 are rejected under 35 U.S.C. § 102(b) as being anticipated by Sabi et al. (*Japanese Journal of Applied Physics*, Part I, 40 (3B), 1613-18 (2001); hereinafter "Sabi") or Adameck et al. (*Appl. Phys. Lett.*, 73 (20), 2884-86 (1998); hereinafter "Adameck") or Hill et al. (*J. Appl. Phys.*, 70 (8), 4649-51 (1991); hereinafter "Hill"). Claims 4-6 are rejected under 35 U.S.C. § 102(b) as being anticipated by Chemical Abstract XP-002314394 (hereinafter "Kostyukov"). Claims 7-9 are rejected under 35 U.S.C. § 102(b) as being anticipated by Chemical Abstract XP-001081820 (hereinafter "Muller").

Claims 4-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ichinohe (U.S. Patent 6,878,792 or EP 1 293 541 A2; hereinafter "Ichinohe").

The Applicant respectfully traverses all of these rejections for the reasons set forth below.

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Claim Rejection Under 35 U.S.C. § 112, Second Paragraph

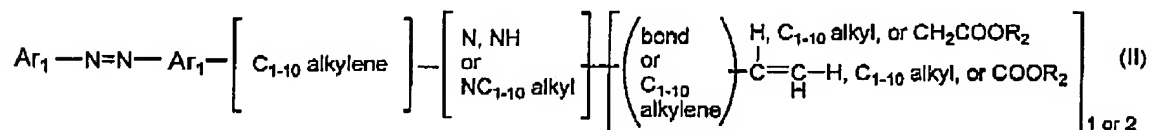
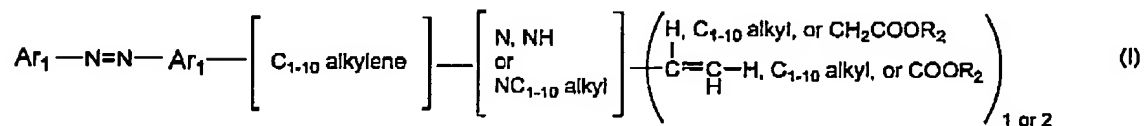
Claims 4 and 5 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Specifically, these claims are rejected because the Examiner does not know the scope and meaning of the expression "is nothing," as applied to the groups R_1 , R_2 , and R_3 and the meaning of the term " C_{1-10} ," as applied to the group R_5 . Claims 4 and 5 are amended to replace "nothing" with –absent– as the context indicates. When a group is absent, it is replaced with a bond. Claims 4 and 5 are amended to clarify that " C_{1-10} ," as applied to R_5 means – C_{1-10} alkyl–, as recited in paragraph [0015] of the original specification. No new matter has been added.

Claim Rejection Under 35 U.S.C. § 102

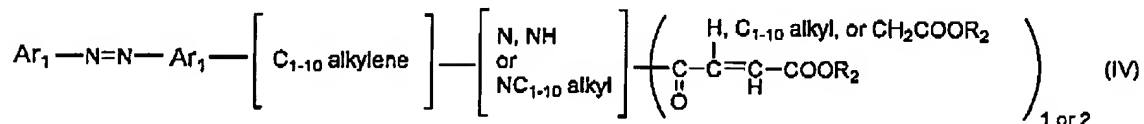
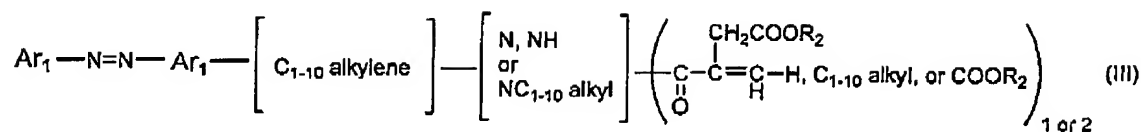
Claims 4-6 are rejected under 35 U.S.C. § 102(b) as being anticipated by Jinkerson '932 and Jinkerson '707. The Applicant respectfully traverses this rejection because neither Jinkerson '932 nor Jinkerson '707 discloses each and every element of each of claims 4-6.

"Anticipation requires the presence in a single prior art reference disclosure each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984) (emphasis added).

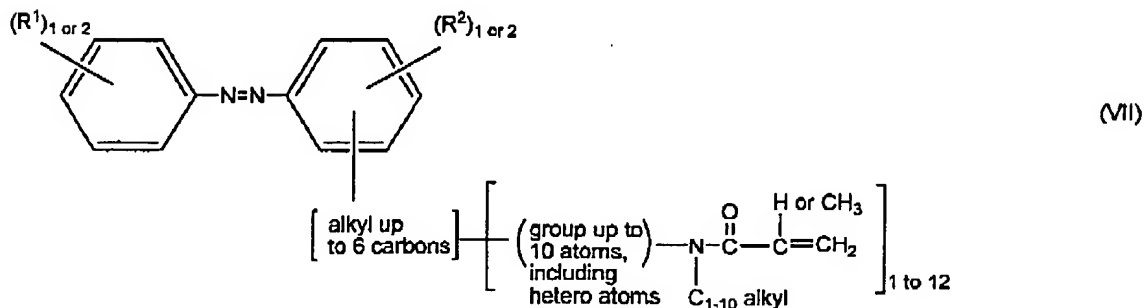
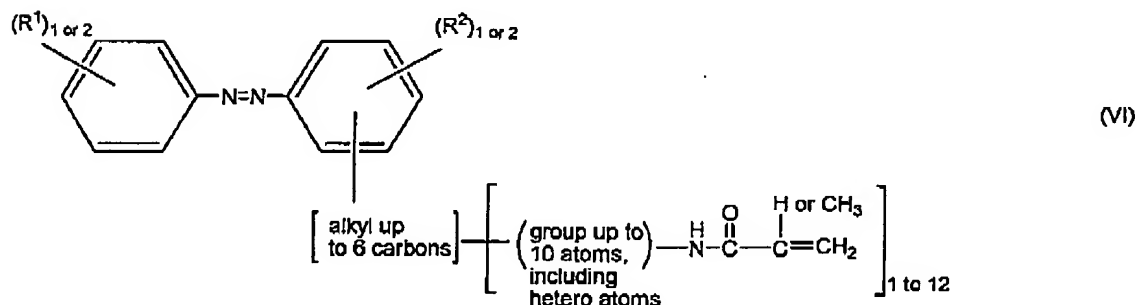
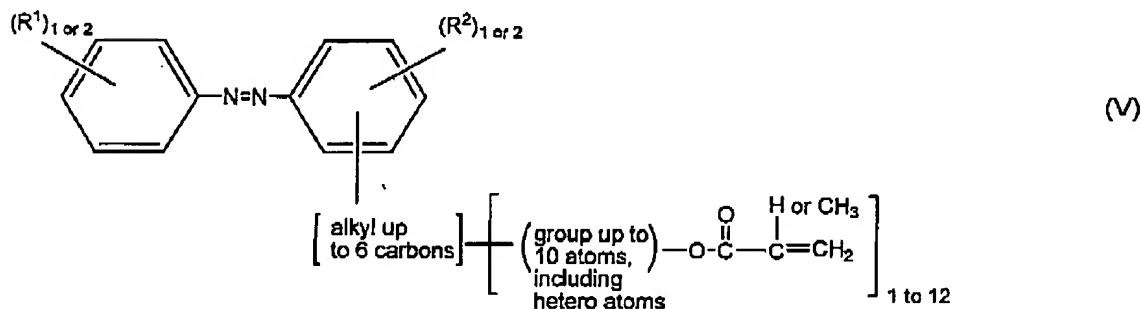
The dye compound of amended claims 4-9 can be written more specifically in the alternative forms, using the definitions of the R_1 - R_5 groups as follows:



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In contradistinction Jinkerson's Formula 1 can be written more specifically, using the definitions of the various substituents, in the alternative forms as follows:



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Jinkerson's compounds require one of the following:

- (1) $-\text{O}-\text{C}(\text{O})-$ group attached to a terminal unsaturated hydrocarbon group (Formula V); or
- (2) $-\text{N}(\text{H})-\text{C}(\text{O})-$ or $-\text{N}(\text{C}_{1-10} \text{ alkyl})-\text{C}(\text{O})-$ group attached to a terminal group of $-\text{CH}=\text{CH}_2$ or $-\text{C}(\text{CH}_3)=\text{CH}_2$ (Formulae VI and VII).

In contradistinction, the compounds of instant claims 4-6: (1) does not have the $-\text{O}-\text{C}(\text{O})-$ group (see Formulae I, II, III, and IV); or (2) when the $-\text{N}(\text{H})-\text{C}(\text{O})-$ or $-\text{N}(\text{C}_{1-10} \text{ alkyl})-\text{C}(\text{O})-$ group is present, has a terminal group of $-\text{C}(\text{CH}_2\text{COOR}_2)=\text{CH}_2$ (Formula III) or $-\text{CH}=\text{C}(\text{H})\text{COOR}_2$ (see Formula IV). Therefore, neither Jinkerson '932 nor Jinkerson '707 discloses each and every element of each of claims 4-6.

Jinkerson '932 and Jinkerson '707 disclose in Formula 2 a tertiary amino group wherein a polymerizable group of $-\text{O}-\text{C}(\text{O})-\text{CH}=\text{CH}_2$, $-\text{O}-\text{C}(\text{O})-\text{C}(\text{CH}_3)=\text{CH}_2$, $-\text{NH}-\text{C}(\text{O})-\text{CH}=\text{CH}_2$, $-\text{NH}-\text{C}(\text{O})-\text{C}(\text{CH}_3)=\text{CH}_2$, $-\text{N}(\text{C}_{1-10} \text{ alkyl})-\text{C}(\text{O})-\text{CH}=\text{CH}_2$, or $-\text{N}(\text{C}_{1-10} \text{ alkyl})-\text{C}(\text{O})-\text{C}(\text{CH}_3)=\text{CH}_2$ is attached to the tertiary nitrogen atom through a linker that may include one or more hetero atoms.

In contradistinction, the compounds of each of claims 4-6 have none of the groups $-\text{O}-\text{C}(\text{O})-$, $-\text{NH}-\text{C}(\text{O})-\text{CH}=\text{CH}_2$, $-\text{NH}-\text{C}(\text{O})-\text{C}(\text{CH}_3)=\text{CH}_2$, $-\text{N}(\text{C}_{1-10} \text{ alkyl})-\text{C}(\text{O})-\text{CH}=\text{CH}_2$, and $-\text{N}(\text{C}_{1-10} \text{ alkyl})-\text{C}(\text{O})-\text{C}(\text{CH}_3)=\text{CH}_2$. Thus, neither Jinkerson '932 nor Jinkerson '707 discloses each and every element of each of claims 4-6.

Since neither Jinkerson '932 nor Jinkerson '707 discloses each and every element of each of claims 4-6, neither Jinkerson '932 nor Jinkerson '707 anticipates these claims.

Claims 4 and 5 are rejected under 35 U.S.C. § 102(b) as being anticipated by Sabi. The Applicant respectfully traverses this rejection because Sabi does not disclose each and every element of each of claims 4 and 5.

"Anticipation requires the presence in a single prior art reference disclosure each and every element of the claimed invention, *arranged as in the claim.*" *Lindemann*

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Maschinenfabrik GmbH v. American Hoist & Derrick Co., 221 U.S.P.Q. 481, 485 (Fed. Cir. 1984) (emphasis added).

Sabi discloses chromophores comprising three aromatic rings.

In contradistinction, the dye compounds of instant claims 4 and 5 have only two aromatic rings. Therefore Sabi does not disclose each and every element of each of claims 4 and 5.

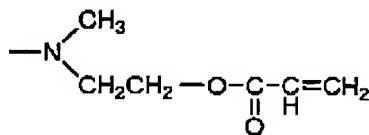
Since Sabi does not disclose each and every element of each of claims 4 and 5, Sabi does not anticipate these claims.

Claims 4 and 5 are rejected under 35 U.S.C. § 102(b) as being anticipated by Adameck allegedly because Adameck discloses azobenzene ester. The Applicant respectfully traverses this rejection because nowhere does Adameck disclose azobenzene. Instead, Adameck discloses only a Red 1 methacrylate chromophore (left column, page 2884). The chemical structure of Adameck is unknown from his disclosure. Therefore, Adameck does not disclose the dye compound of instant claims 4 and 5; i.e., each and every element of each of claims 4 and 5. Since Adameck does not disclose each and every element of each of claims 4 and 5, Adameck does not anticipate these claims.

Claims 4 and 5 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hill. The Applicant respectfully traverses this rejection because Hill does not disclose each and every element of each of claims 4 and 5.

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a *single* prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987) (emphasis added).

Hill discloses a dye having a polymerizable side group of



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In contradistinction, the compounds of instant claims 4 and 5 do not have this group. See Formulae I, II, III, and IV above. Thus, Hill does not disclose each and every element of each of claims 4 and 5.

Since Hill does not disclose each and every element of each of claims 4 and 5, Hill does not anticipate these claims.

Claims 4-6 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kostyukov. The Applicant respectfully traverses this rejection because Kostyukov does not disclose each and every element of each of claims 4-6.

Kostyukov's compound I has an oxygen atom attached directly to a benzene ring. In contradistinction, the compounds of instant claims 4-6 do not have any oxygen atom directly attached to a benzene ring.

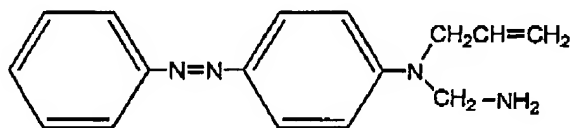
Kostyukov's compound II has a side group having a tertiary nitrogen atom attached directly to a benzene ring. In contradistinction, the compounds of instant claims 4-6 do not have any tertiary nitrogen atom attached directly to a benzene ring.

Kostyukov's compound III has an SO₂ group in the side group. In contradistinction, the compounds of instant claims 4-6 do not have any SO₂ group in the side group.

Therefore, Kostyukov does not disclose each and every element of each of claims 4-6, and thus cannot anticipate these claims.

Claims 7-9 are rejected under 35 U.S.C. § 102(b) as being anticipated by Muller. The Applicant respectfully traverses this rejection because Muller does not disclose each and every element of each of claims 7-9.

Muller discloses 4-(N-allyl-N-methylamino)azobenzene. This compound is represented by the following formula



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In contradistinction, the compounds of instant claims 7-9 do not have a terminal -NH₂ group. Therefore, Muller does not disclose each and every element of each of claims 7-9, and thus cannot anticipate these claims.

Claim Rejection Under 35 U.S.C. § 103(a)

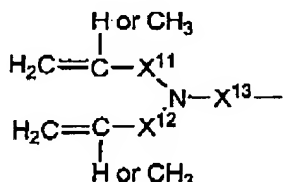
Claims 4-9 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Ichinohe. Specifically, the Examiner opines that these claims are not patentable over Formulae I and II of Ichinohe. The Applicant respectfully traverses this rejection because Ichinohe does not teach or suggest all of the limitations of each of claims 7-9.

"To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." M.P.E.P. § 2143.03 (8th ed., Rev. 2, May 2004).

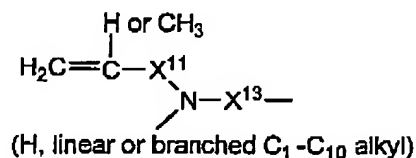
Formula I of Ichinohe shows a benzene or naphthyl ring attached to a five-membered ring through a diazo linkage. In contradistinction, the compounds of claims 4-9 comprise two C₆₋₃₆aromatic rings attached through a diazo linkage.

Moreover, there must be something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the invention. *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 U.S.P.Q. 481, 488 (Fed. Cir. 1984).

Although Formula II of Ichinohe shows two benzene rings attached through a diazo linkage, one of the side groups must be



or



wherein X¹¹, X¹², and X¹³ are linear or branched bivalent spacer groups (note that this definition does not suggest any particular group with any specificity that is required for a teaching or motivation standard of 35 U.S.C. § 103(a)) or -(CH₂)_m-O-(CH₂)_n-.

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The spacers X^{11} , X^{12} , and X^{13} as disclosed by Ichinohe encompass an infinite number of species, and thus do not provide suggestion or motivation for choosing any particular spacers, especially the spacers recited in the instant claims. *In re Bell*, 991 F.2d 781, 784 (Fed. Cir. 1993) ("Absent anything in the cited prior art suggesting which of the 10^{38} possible sequences suggested by Rinderknecht corresponds to the IGF gene, the PTO has not met its burden of establishing that the prior art would have suggested the claimed sequences.")

Since Ichinohe's Formula I does not teach or suggest all of the limitations of each of claims 4-9 and Formula II does not provide any suggestion or motivation to arrive at the claimed compounds of claims 4-9, Ichinohe does not render claims 4-9 obvious.

Respectfully submitted,



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November 10, 2005